

## ОГЛЯДИ

УДК 616.248:616.314

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### CURRENT TRENDS IN PERIODONTITIS TREATMENT AND PREVENTION: A LITERATURE OVERVIEW

**The aim** of this article is to review modern researches devoted to the study of methods of prevention and treatment of periodontitis. **Results.** It should be noted that the analysed scientific works only briefly touch on the issue of periodontitis prevention, noting that it depends on both oral hygiene and a person's lifestyle. To maintain healthy teeth and periodontal disease, dentists recommend: giving up smoking, eating a variety of foods, including vegetables and fruit in the diet, limiting the consumption of too cold and hot food, using dental floss and mouth rinses, choosing toothpaste and the hardness of the toothbrush taking into account the recommendations of the specialist. Unfortunately, not all plaque can be removed at home. Hygiene becomes more difficult if the teeth are crowded, if there are prostheses or braces. Therefore, it is important to undergo preventive examinations every six months, not forgetting professional teeth cleaning at the dentist. Conservative treatment involves therapeutic (mechanical treatment of canals; medicinal (antiseptic) treatment of canals; if necessary, an incision to remove inflammatory products; sealing) and physiotherapeutic (UHF therapy; electrophoresis; laser therapy; therapeutic baths and pastes) procedures. Conservative treatment of periodontitis is accompanied by taking antibiotics. The surgical method of treatment involves resection of the tip of the tooth root with subsequent filling of the apical section of the canal; complete tooth root removal; tooth extraction. Due to the peculiarities of the anatomical structure of the root canals of the teeth, endodontic treatment becomes ineffective. **Conclusion.** At the current stage of development, the complex treatment of periodontitis has several treatment methods that combine the use of the most modern pharmaceuticals in combination with therapeutic and surgical methods, which in the future allows to obtain a fairly good and stable result.

**Key words:** periodontitis, prevention, conservative treatment, surgical treatment, hygiene.

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### СУЧАСНІ ТЕНДЕНЦІЇ У ЛІКУВАННІ ТА ПРОФІЛАКТИЦІ ПЕРІОДОНТИТУ: ОГЛЯД ЛІТЕРАТУРИ

**Метою** даної статті є огляд сучасних досліджень, присвячених вивченню методів профілактики і лікування періодонтиту. **Результати.** Слід зазначити, що проаналізовані наукові праці лише побіжно торкаються питання профілактики періодонтиту, відзначаючи, що вона залежить як від гігієни порожнини рота, так й від способу життя людини. Щоб зберегти здорові зуби та періодонт, стоматологи рекомендують: відмовитися від куріння, харчуватися різноманітно, включаючи в раціон овочі та фрукти, обмежити споживання занадто холодної та гарячої їжі, використовувати зубну нитку та ополіскувачі для порожнини рота, підбирати пасту та жорсткість зубної щітки з урахуванням рекомендацій спеціаліста. На жаль, не весь зубний наліт можна видалити в домашніх умовах. Гігієна ускладнюється при скученості зубів, наявності протезів чи брекетів. Тому важливо кожні шість місяців проходити профілактичні огляди, не забуваючи про професійне чищення зубів у стоматолога. Консервативне лікування передбачає терапевтичні (механічне оброблення каналів; медикаментозна (антисептична) обробка каналів; за необхідності – розріз для виведення продуктів запалення; пломбування) та фізіотерапевтичні (УВЧ-терапія; електрофорез; лазеротерапія; лікувальні ванни та пасту) процедури. Консервативне лікування періодонтиту супроводжується прийомом антибіотиків. Хірургічний метод лікування передбачає резекцію кінчика кореня зуба з подальшим пломбуванням апікальної ділянки каналу; повне видалення кореня зуба; екстракція зуба. Через особливості анатомічної будови кореневих каналів зубів ендодонтичне лікування стає малоефективним. **Висновок.** На сучасному етапі розв'язку комплексне лікування періодонтиту має кілька методик лікування, які поєднують у собі застосування найсучасніших фармацевтичних препаратів у поєднанні з терапевтичними і хірургічними методами, що надалі дозволяє отримати досить добрий і стійкий результат.

**Ключові слова:** періодонтит, профілактика, консервативне лікування, хірургічне лікування, гігієна.

**Introduction.** Diseases of periodontal tissues occupy a prominent place among all dental diseases, which is due to the high prevalence, complexity of diagnosis and sometimes the lack of long-term positive results of treatment. The prevalence of periodontal tissue diseases, in particular chronic periodontitis, begins in patients over 30 years old who sought dental care, and, according to some authors, reaches 30 %, increasing in patients of older age groups. At the current stage of development, the complex treatment of periodontitis of various degrees of bone tissue resorption has several treatment methods that combine the use of the most modern pharmaceuticals in combination with therapeutic and surgical methods, which in the future allows obtaining a fairly good and stable result [1]. Periodontitis is widely regarded as the second most common type of dental disease worldwide, following dental decay [2].

**Aim.** The given article is dedicated to the overview of the researches dedicated to the study of methods of prevention and treatment of periodontitis.

**Results.** Periodontal disease is primarily associated with bacterial infection such as dental plaque. Dental plaque, an oral biofilm harboring a complex microbial community, can cause various inflammatory reactions in periodontal tissue. In many cases, the local bacterial invasion and immune responses lead to severe alveolar bone destruction [3]. Several diseases can affect the mouth, such as oral cancer, dental caries, Lichen Planus and, of course, periodontal disease with its variants [2]. The common features of periodontitis include gingival inflammation, clinical attachment loss, radiographic evidence of alveolar bone loss, sites with deep probing depths, mobility, bleeding upon probing, pathologic migration [4].

Periodontitis is a bacterial-associated and host-mediated multifactorial inflammatory disease. Although the overall phenotype of chronic periodontitis may be similar across patients, the underlying causes of the disease vary. Traditional periodontal treatment fails primarily when local inflammation caused by bacterial invasion is met with an uncontrolled host immune response. As the researchers claim, novel responses to periodontitis will require an understanding of individual molecular pathogenesis and the development of target-oriented therapeutic drugs [3].

Periodontal disease is initially a local oral disease with its pathologies including tooth loss, inflammation, difficulty in chewing and bad breath. However, it is important to recognize that the disease has a much wider range of impact and potential pathologies which have to draw our attention to its treat-

ment and prevention. Initial treatment involves good oral hygiene and professional teeth cleaning. In certain cases, it will also include the use of antibiotics and periodontal surgery. No doubt the most important treatment is primary prevention, which is not only most effective, but also the most cost-effective method of coping with the disease and with its possible complications [5].

In the present clinical scenario globally, there is a great interest in the use of antimicrobial agents for prevention and treatment of plaque-related oral diseases due to the spread of antibiotic resistance in oral cavity microorganisms. There has been an extensive research on the effectiveness of minimum inhibitory concentration of agents for cariogenic and periodontopathogenic microorganisms. Among antibiotic alternatives are therapies derived from complementary and alternative medicine to cope with the widespread problem of antibiotic resistance [6].

In order to strengthen the effects of the mechanical avenue, an additional chemical, the antiseptic avenue, has been developed, including the chlorhexidine gluconate-based mouthwash, and other mouth rinses [2].

There is a number of novel ideas, some of which seem to be very promising. The one is the YAMA+ natural toothpaste based on 70% Dead Sea water and 30% essential oils with anti-inflammatory attributes. As it is known, salt has a long history of beneficial effects on healing gum disease [7].

Ozone therapy is a form of alternative medicine that purports to increase the amount of oxygen in the body through the introduction of ozone. Ozonated water is a natural disinfectant, biocompatible with oral tissue. The ozonated water reduces inflammation and kills pathogenic bacteria. The Purecare oral irrigator is a new method through which regular water with a patented capsule and by a simple procedure produce Ozone [2].

At present, the prevention of any disease, including dental disease, should be carried out, first of all, taking into account geographic and ecological positions. The conditions of life on the planet are changing radically and have a strong impact on human health. One of the conditions for the emergence and development of dental diseases is a change in the quality of the environment and its effect on the human body, which is not always able to adapt to changes and the effects of the environment. Various factors have impact on a modern person: social, economic, industrial, urbanization, information load and increased migration, mobility of the population. From the point of view of medicine, the impact of

environmental factors on the body can have various harmful consequences [8].

A patient's medical history should be obtained prior to periodontal assessment. This will provide identification of any systemic or environmental risk factors for periodontitis, such as diabetes and smoking. A comprehensive periodontal evaluation includes several clinical parameters: biofilm index, periodontal probing depth, presence of bleeding on probing, gingival recession, mucogingival deformity, furcation involvement, tooth mobility, and occlusal trauma. A comprehensive radiographic evaluation is a part of the initial periodontal evaluation to determine the extent of horizontal and vertical alveolar bone loss. Careful diagnosis, elimination of the causes and reduction of modifiable risk factors are paramount for successful prevention and treatment of periodontitis. Initial non-surgical periodontal therapy primarily consists of home care review and scaling and root planing [4].

The effectiveness of conservative treatment of periodontitis is on average about 75%, but this indicator varies and depends on many factors: the clinical form of the disease, the body's resistance, what methods and drugs the patients were treated with, etc. The success of the treatment depends on a successful combination of orthopedic and surgical methods and, in particular, drugs that are used for therapeutic treatment. Difficulties in the treatment of periodontitis lie in the fact that the regeneration of the destruction of the focus of the periapical area occurs after 6-12 months of endodontic treatment. Due to the peculiarities of the anatomical structure of the root canals of the teeth, endodontic treatment becomes ineffective. Therefore, some authors prefer the use of drugs and physiotherapeutic methods that act on the immune system, which corrects the immune status and activates the processes of physiological repair. Endodontic treatment of teeth occupies a special place among all interventions performed by a therapist, this is due to a significant increase in endodontic pathology (pulpitis and especially periodontitis), which has a pronounced tendency to increase [1].

Surgical methods are often used to treat chronic forms of periodontitis, but the effectiveness of their use is not always high. The choice of a surgical method for the treatment of teeth with chronic periapical foci of odontogenic infection depends on many factors: the features of the anatomical structure of the tooth shape, the general condition of the patient, the characteristics and extent of the periapical process, the condition of the hard tissues of the tooth and the periodontium as a whole, the relationship between

the tips of the tooth roots and closely located anatomical formations of the jaws and anatomical features of the structure of the alveolar arches of the jaws. When choosing a treatment scheme, one must take into account the individuality of each tooth, and, of course, the method of treatment of this contingent of patients must be implemented individually for each patient [9].

**Conclusion.** It should be noted that the analysed scientific works only briefly touch on the issue of periodontitis prevention, noting that it depends on both oral hygiene and a person's lifestyle. To maintain healthy teeth and periodontal disease, dentists recommend: giving up smoking, eating a variety of foods, including vegetables and fruit in the diet, limiting the consumption of too cold and hot food, using dental floss and mouth rinses, choosing toothpaste and the hardness of the toothbrush taking into account the recommendations of the specialist. Unfortunately, not all plaque can be removed at home. Hygiene becomes more difficult if the teeth are crowded, if there are prostheses or braces. Therefore, it is important to undergo preventive examinations every six months, not forgetting professional teeth cleaning at the dentist. Conservative treatment involves therapeutic (mechanical treatment of canals; medicinal (antiseptic) treatment of canals; if necessary, an incision to remove inflammatory products; sealing) and physiotherapeutic (UHF therapy; electrophoresis; laser therapy; therapeutic baths and pastes) procedures. Conservative treatment of periodontitis is accompanied by taking antibiotics. The surgical method of treatment involves resection of the tip of the tooth root with subsequent filling of the apical section of the canal; complete tooth root removal; tooth extraction. Due to the peculiarities of the anatomical structure of the root canals of the teeth, endodontic treatment becomes ineffective. At the current stage of development, the complex treatment of periodontitis has several treatment methods that combine the use of the most modern pharmaceuticals in combination with therapeutic and surgical methods, which in the future allows to obtain a fairly good and stable result.

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